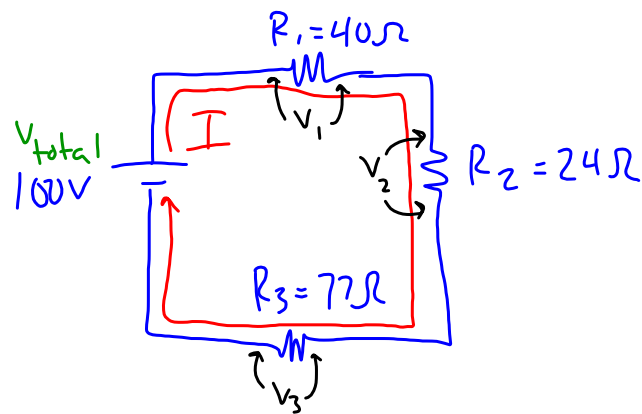


1. Find I , V_1 , V_2 , V_3



$$\begin{aligned} \textcircled{1} R_{\text{total}} &= R_1 + R_2 + R_3 \\ &= 40\Omega + 24\Omega + 77\Omega \\ &= 141\Omega \end{aligned}$$

$$\textcircled{2} V_{\text{total}} = I R_{\text{total}}$$

$$\begin{aligned} I &= \frac{V_{\text{total}}}{R_{\text{total}}} \\ &= \frac{100\text{V}}{141\Omega} = 0.71\text{A} \end{aligned}$$

$$\textcircled{3} V_1 = I R_1 = (40\Omega)(0.71\text{A}) = 28.4\text{V}$$

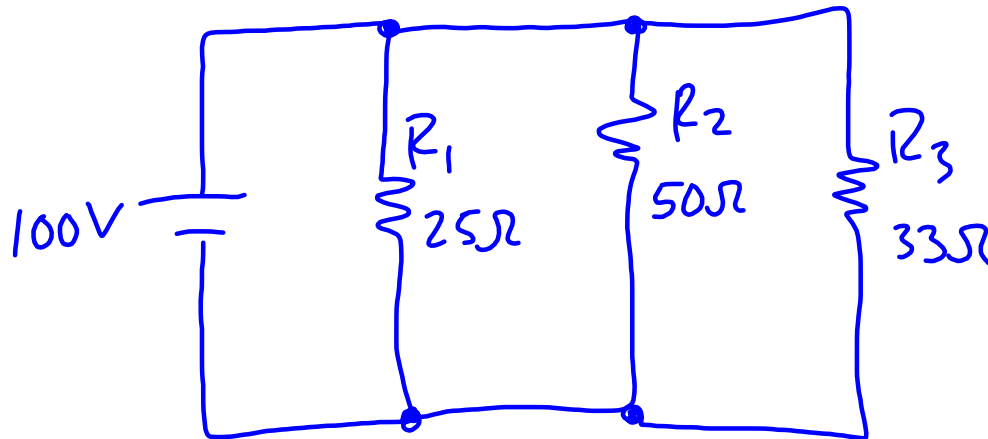
$$V_2 = I R_2 = (24\Omega)(0.71\text{A}) = 17.04\text{V}$$

$$V_3 = I R_3 = (77\Omega)(0.71\text{A}) = 54.67\text{V}$$

$$100.11\text{V}$$

* This is close
enough to 100V

2. Find I_1, I_2, I_3

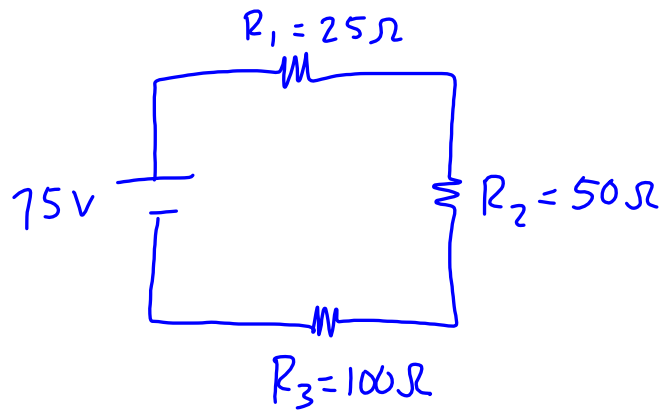


$$V_1 = V_2 = V_3 = 100V$$

$$\begin{aligned} I_1 &= \frac{V_1}{R_1} & I_2 &= \frac{V_2}{R_2} & I_3 &= \frac{V_3}{R_3} \\ &= \frac{100V}{25\Omega} & &= \frac{100V}{50\Omega} & &= \frac{100V}{33\Omega} \\ &= 4A & &= 2A & &= 3.33A \end{aligned}$$

$$\begin{aligned} I_{\text{total}} &= I_1 + I_2 + I_3 \\ &= 4A + 2A + 3.33A \\ &= 9.33A \end{aligned}$$

3. Find I , V_1 , V_2 , V_3



$$\begin{aligned}
 R_{\text{total}} &= R_1 + R_2 + R_3 \\
 &= 25\Omega + 50\Omega + 100\Omega \\
 &= 175\Omega
 \end{aligned}$$

$$\begin{aligned}
 I &= \frac{V_{\text{total}}}{R_{\text{total}}} \\
 &= \frac{75\text{V}}{175\Omega} = 0.428\text{A}
 \end{aligned}$$

$$V_1 = I R_1 = (0.428\text{A})(25\Omega) = 10.7\text{V}$$

$$V_2 = I R_2 = (0.428\text{A})(50\Omega) = 21.4\text{V}$$

$$\begin{aligned}
 V_3 &= I R_3 = (0.428\text{A})(100\Omega) = 42.8\text{V} \\
 &\quad \underline{\hspace{1.5cm}} \\
 &\quad \quad 74.9\text{V}
 \end{aligned}$$